Claims:

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What is claimed is:

- 1 1. A client-server based file transfer method for a client computer system comprising the steps of:
- keeping at the client computer system, at least a portion of a file system associated file ready for being accessed by an application program while the contents of said file is being transferred between said server and said client, and
- fulfilling application program-initiated requests for accessing specified portions of said file while said file is being transferred.
- The method according to claim 1 further comprising,

 communicating with said file system by a Future File System Extension program, via a

 protocol directed to file accesses to said file system.
- The method according to claim 2 in which said protocol is XDSM or derivable from XDSM, or functionally equivalent to XDSM.
- 1 4. The method according to claim 2 in which said Future File System Extension program is 2 implemented as a stacked file system.
- 1 5. The method according to claim 2 in which said Future File System Extension program is 2 implemented in the file system itself.
- 1 6. The method according to claim 1 further comprising, 2 rendering data on the client computer system.

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via a protocol directed to file accesses to said file system.



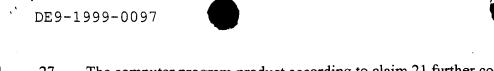
- 1 13. The apparatus according to claim 12 in which said protocol is XDSM or derivable from 2 XDSM, or functionally equivalent to XDSM. 14. The apparatus according to claim 12 in which said Future File System Extension program 1 2 is implemented as a stacked file system. The apparatus according to claim 12 in which said Future File System Extension program 1 15. 2 is implemented in the file system itself. 16. 1 The apparatus according to claim 11 further comprising, 2 means for rendering data on the client computer system.
- 1 17. The apparatus according to claim 11 further comprising,
 means for directly transferring data between a server and an end-user client.
- The apparatus to claim 17 further comprising,

 means for transferring new media data by streaming the data from the server.
- 1 find 19. A client-server based file transfer apparatus comprising:

 means for issuing specifications by said client-server, and
- means for streaming client-requested file information to a client computer system in portions according to the specifications issued by said client-server.
- 1 20. The apparatus according claim 19 in which said means for streaming includes means for sequentially streaming, skipping portions of the requested file previously streamed.



- A computer program product comprising a computer useable medium having computer 21. 1 2 readable program code means therein for use with a client-server based file transfer 3 apparatus for a client computer system comprising:
- computer readable program code means keeping at the client computer system, at least a 4 portion of a file system associated file ready for being accessed by an application program 5 while the contents of said file is being transferred between said server and said client, and 6
- 7 computer readable program code means for fulfilling application program-initiated requests 8 for accessing specified portions of said file while said file is being transferred.
- 22. The computer program product according to claim 21 further comprising, computer readable program code means for communicating with said file system by a Future File System Extension program, via a protocol directed to file accesses to said file system.
- 23. The computer program product according to claim 22 in which said protocol is XDSM or derivable from XDSM, or functionally equivalent to XDSM.
- The computer program product according to claim 22 in which said Future File System 24. 2 Extension program is implemented as a stacked file system.
- 1 25. The computer program product according to claim 22 in which said Future File System 2 Extension program is implemented in the file system itself.
- 1 26. The computer program product according to claim 21 further comprising, 2 computer readable program code means for rendering data on the client computer system.



- The computer program product according to claim 21 further comprising,

 computer readable program code means for directly transferring data between a server and

 an end-user client.
- The computer program product according to claim 27 further comprising,

 computer readable program code means for transferring new media data by streaming the

 data from the server.
- 1 29. A computer program product comprising a computer useable medium having computer 2 readable program code means therein for use with a client-server based file transfer 3 apparatus comprising:
- computer readable program code means for issuing specifications by said client-server, and computer readable program code means for streaming client-requested file information to a client computer system in portions according to the specifications issued by said client-server.

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30. The computer program product according claim 29 in which said computer readable program code means for streaming includes computer readable program code means for sequentially streaming, skipping portions of the requested file previously streamed.